

REMARKS

Claims 1-30 were presented for examination. Claims 16-30, newly presented in a previous Response to Office Action, were subjected to an election requirement and claims 1-15 were constructively elected. Claims 1-15 were rejected. In response to the above-identified Office Action, Applicants propose to amend claim 1, but do not cancel any claims or add any new claims. Claims 16-30 are withdrawn. Reconsideration of the rejected claims in light of the aforementioned amendment and the following remarks is requested.

I. Finality of Current Office Action is Premature

As an initial matter, Applicants observe that the Examiner has cited a new reference, *Operating System Concepts*, 5th ed. by Silberschatz *et al.* ("Silberschatz"). In the current Office Action, claim 9 was rejected "for the same reasons as claim 5," and claim 5 was rejected over *Silberschatz* and the previously-cited reference *Distributed Systems Concepts and Design*, 2nd ed. by Coulouris *et al.* ("Coulouris"). Therefore, it appears that claim 9 was also rejected over *Silberschatz* and *Coulouris*. However, *Silberschatz* was not relied upon in the prior rejection of claim 9, and the Examiner did not assert that Applicants' changes necessitated the new ground of rejection. (Indeed, such an assertion would be false, since claim 9 was not amended.) Therefore, Applicants believe that the rejection of claim 9 on new grounds prevents the Examiner from making the current Office Action a Final Action. See MPEP § 706.07(a): "second or any subsequent actions on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor based on information submitted in an information disclosure statement[.]" (emphasis added). As directed by MPEP § 706.07(c), Applicants hereby raise a question as to the prematurity of the final rejection, and respectfully request that the Examiner withdraw the finality and issue a new Action or allow the existing claims.

II. Claims Rejected Under 35 U.S.C. § 103(a)

The Examiner rejected claims 1-15 under 35 U.S.C. § 103(a) as unpatentable over, in view of *Silberschatz*.

As to claim 1, that claim recites a method comprising maintaining a first page table map for use in an isolated execution mode and a second page table map for use in a normal execution mode. The Examiner asserts that the claimed isolated execution mode is a standard process which executes its own code in an isolated manner, and that the normal execution mode is the special case of shared pages between processes. Applicants believe that the Examiner has identified a distinction without a difference: as the Examiner is clearly aware, each process executing on a machine typically has its own page table, but some contents of the table may be partially shared (as, for example, when two processes share pages). However, two such processes, either with or without shared pages mapped into their virtual address spaces, do not execute in any distinguishably different mode; instead, their address spaces are isolated (or not) solely as a result of the contents of their respective page tables. In other words, any difference in the way the processes execute is a *result* of the different page tables, and not a *cause* of the use of one page table or another. For at least these reasons, Applicants respectfully submit that the references of record fail to teach or suggest at least the normal and isolated execution modes as recited in claim 1, and ask that the Examiner withdraw the rejection of the claim.

As to claim 2, that claim was rejected under 35 U.S.C. § 112 in the first Office Action because Applicants had inadvertently repeated claim 1 instead of providing further limitation to that base claim. In the response received September 4, 2004, claim 2 was corrected, but no analysis of the corrected claim appears in the current Final Office Action, nor is any specific disposition made. Applicants believe that claim 2 is patentable for at least the reasons discussed above in support of its base claim.

As to claims 3, 4 and 6-8, those claims depend directly or indirectly upon claim 1, and are patentable for at least the reasons discussed in support of that base claim.

As to claim 5, that claim refines the method of claim 1 to include mirroring a page table base address register. The Examiner cites Silberschatz's discussion of RAID mirroring (a mass storage device technique), apparently for the proposition that such hard disk operations would suggest mirroring a page table base address register as a way to maintain a first page table map for use in an isolated execution mode and a second page table map for use in a normal execution mode. However, Applicants believe that the only common element between these two operations is the name "mirroring." In the RAID context, identical data is placed on two physical devices, so

that if one of the devices fails, the data can be recovered from the other. By contrast, "mirroring" in claim 5 refers to maintaining two page table base address registers (also called "CR3"), of which one is selected based on a signal which indicates one of normal or isolated execution mode (see Fig. 2 and page 12, lines 1-9). Apart from the name, Applicants can find little commonality between RAID mirroring and mirroring a page table base address register. Also, claim 5 depends upon claim 1, and receives further support from the arguments advanced in support of that claim. For at least these reasons, Applicants respectfully submit that claim 5 is patentable over the references of record, and ask that the Examiner withdraw this rejection.

As to claim 9, that claim recites an apparatus comprising first and second locations storing control data for first and second page table maps, respectively; and a selection unit to select which page table map is applied responsive to receipt of an event. The Examiner rejected this claim "for the same reasons as claim 5," supplemented by an identification of the claimed selection unit within Coulouris' Section 6.4 and Fig. 6.12. As mentioned above, claim 5 was rejected on grounds no more substantial than the occurrence of the same word in descriptions of two separate subsystems: (mass storage device management and page table management). However, even assuming that storage locations storing control data for a page table map could be equated with disk use techniques, it is not clear how disk use techniques could be combined with the "fundamental issue in distributed systems design" of distinguishing or correlating human-readable textual names and lower-level identifiers such as bit strings that can be efficiently stored and manipulated.

Additionally, as noted earlier, claim 9 has been rejected on new grounds, not necessitated by Applicants' amendment.

For at least these reasons, Applicants believe that the Examiner has failed to identify in the references of record material that teaches or suggests every limitation of claim 9, and ask that the Examiner withdraw the rejection of this claim, and/or the finality of the current Action.

Regarding claim 10, that claim depends upon claim 9, and is patentable for at least the reasons discussed in support of its base claim. Claim 11 (also dependent upon claim 9) was not specifically discussed in either of the Office Actions, but Applicants believe that it is patentable for at least the same reasons. The Examiner is requested to withdraw the rejections of claims 10 and 11 also.

Claim 12 recites a platform comprising a processor executing in one of normal execution mode and isolated execution mode. The Examiner repeats the assertion that the normal and isolated execution modes are as discussed above: normal processes with or without shared pages in their memory maps. However, as Applicants previously argued, the difference between processes that do or do not share pages with other processes is simply a result of the contents of their page tables, and not an identifiable difference in an execution mode. Since the references of record do not teach or suggest distinguishable execution modes, Applicants submit that claim 12 is allowable over those references, and respectfully request that the Examiner withdraw this rejection.

As to claims 13-15, those claims depend upon claim 12, and are patentable for at least the reasons discussed in support of that claim. The Examiner is requested to withdraw the rejection of these claims as well.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely claims 1-15, patentably define the subject invention over the prior art of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. In addition, Applicants believe that the current examination was prematurely finalized, and request the withdrawal of the finality of the rejections pursuant to MPEP § 706.07(d). If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800.

Dated: 6/7, 2005 Respectfully submitted,
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6/7/05
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